

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 4. (Canceled).

5. (New) A central unit for a multi-carrier system, comprising:

multiple carrier wave reception equipment for the reception of a signal transmitted using multiple carrier waves from a multiple carrier unit;

subset carrier wave reception equipment for the reception of a signal transmitted on a subset of carrier waves from a subset-carrier unit, i.e. a unit equipped for transmitting a subset of the carrier waves in the multi-carrier system, where the subset of carrier waves corresponds to any subset of the carrier waves in the multi-carrier system; and

a scheduler for scheduling the signal transmission from the subset-carrier unit on the subset of carrier waves by communicating with the subset-carrier unit using a first transmission frame format modified from a second transmission frame format used for communications between a multiple carrier unit in the multi-carrier system and the central unit.

6. (New) A central unit according to claim 5, wherein the first transmission frame format includes a data field for a subset-carrier unit to request permission to transmit data over the one carrier wave.

7. (New) A central unit according to claim 5, wherein the first and second transmission frame formats are media access control (MAC) formats.

8. (New) A central unit according to claim 7, wherein the scheduler is configured to use a MAC-identifier in scheduling transmissions with one or more subset-carrier units.

9. (New) A central unit according to claim 5, wherein the subset of the carrier waves is one single carrier wave, and the subset-carrier unit is a single-carrier unit.
10. (New) A central unit according to claim 9, wherein the one carrier wave corresponds to a carrier at a central frequency of the multi-carrier system or a pilot signal carrier of the multi-carrier system.
11. (New) Subset-carrier equipment for transmitting a subset of the carrier waves in a multi-carrier system, equipped with means for receiving transmissions in the multi-carrier system; and means, in interaction with the central unit according to claim 4, for scheduling transmissions to the central unit, wherein the interaction with the central unit for the scheduling of transmissions is carried out by means of a modification of one of the existing frames used for scheduling the communication within the multi-carrier system.
12. (New) Subset-carrier equipment according to claim 11, which is equipped with means for sending requests for data transmission to the central unit.
13. (New) Subset-carrier equipment according to claim 11, wherein the subset of the carrier waves is one single carrier wave, and the subset-carrier equipment is single-carrier equipment.
14. (New) Subset-carrier equipment, arranged for transmitting a subset of the carrier waves in a multi-carrier system, for use in a multi-carrier system including a central unit that communicates with multiple carrier units using multiple carriers, comprising:
 - a receiver for receiving a multi-carrier transmission from the central unit in the multi-carrier system;
 - a transmitter for transmitting a subset carrier transmission, using a subset of the carrier waves in the multi-carrier system where the subset of carrier waves corresponds to any subset of the carrier waves in the multi-carrier system, to the central unit; and

a scheduler for scheduling the subset carrier transmission to the central unit on a subset of the multiple carrier waves used in the multi-carrier system,

wherein the scheduler is configured to communicate with the central unit using a first transmission frame format modified from a second transmission frame format used for communications between a multiple carrier unit in the multi-carrier system and the central unit.

15. (New) The subset-carrier equipment according to claim 14, wherein the first transmission frame format includes a data field for a subset-carrier unit to request permission from the central unit to transmit data over the subset of carrier waves.

16. (New) The subset-carrier equipment according to claim 14, wherein the subset of the carrier waves is one single carrier wave, and the subset-carrier equipment is single-carrier equipment.

17. (New) The single carrier equipment according to claim 16, wherein the one carrier wave corresponds to a carrier at a central frequency of the multi-carrier system or a pilot signal carrier of the multi-carrier system.

18. (New) A method implemented in a central unit for a multi-carrier system, comprising:
receiving a signal transmitted using multiple carrier waves from a multiple carrier unit,
and

receiving a signal transmitted on a subset of carrier waves from a subset-carrier unit equipped for transmitting a subset of the multiple carrier waves in the multi-carrier system, where the subset of carrier waves corresponds to any subset of the multiple carrier waves in the multi-carrier system; and

wherein the signal transmission from the subset-carrier unit on the subset of carrier waves uses a first transmission frame format modified from a second transmission frame format used for communications between the multiple carrier unit and the central unit.

19. (New) A method according to claim 18, wherein the first transmission frame format includes a data field for a subset-carrier unit to request permission to transmit data over the one carrier wave.

20. (New) A method according to claim 18, wherein the first and second transmission frame formats are media access control (MAC) formats.

21. (New) A method according to claim 20, further comprising:
using a MAC-identifier in scheduling transmissions with one or more subset-carrier units.

22. (New) A method in claim 18, wherein the subset of the carrier waves is one single carrier wave, and the subset-carrier unit is a single-carrier unit.

23. (New) A method according to claim 22, wherein the one carrier wave corresponds to a carrier at a central frequency of the multi-carrier system or a pilot signal carrier of the multi-carrier system.

24. (New) A method according to claim 18, wherein the communicating step includes scheduling the transmission.

25. (New) A method implemented in a subset-carrier equipment arranged for transmitting a subset of multiple carrier waves in a multi-carrier system including a central unit that communicates with multiple carrier units using multiple carriers, comprising:

receiving a multi-carrier transmission from the central unit in a multi-carrier system;

transmitting a subset carrier transmission, using a subset of the carrier waves in the multi-carrier system where the subset of carrier waves corresponds to any subset of the carrier waves in the multi-carrier system, to the central unit; and

communicating the signal transmission from the subset-carrier equipment, on the subset of the multiple carrier wave, using a first transmission frame format modified from a second transmission frame format used for communications between a multiple carrier unit in the multi-carrier system and the central unit.

26. (New) The method according to claim 25, wherein the first transmission frame format includes a data field for a subset-carrier unit to request permission from the central unit to transmit data over the one carrier wave.

27. (New) The method according to claim 25, wherein the subset of the carrier waves is one single carrier wave, and the subset-carrier equipment is single-carrier equipment.

28. (New) The method according to claim 27, wherein the one carrier wave corresponds to a carrier at a central frequency of the multi-carrier system or a pilot signal carrier of the multi-carrier system.

29. (New) A method according to claim 25, wherein the communicating step includes scheduling the transmission.